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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/941,541 | 08/29/2001 | Satoshi Inoue | 9319G-000276 | 7043 |

27572 7590 11/17/2004

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| EXAMINER |
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NGUYEN, JENNIFER T

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| ART UNIT | PAPER NUMBER |
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2674

DATE MAILED: 11/17/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/941,541

Applicant(s)

INOUE, SATOSHI

Examiner

Jennifer T Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 9, 13, 14 and 16 is/are rejected.
- 7) ☒ Claim(s) 10-12 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office action is responsive to amendment filed on 03/24/2004.
2. Claims 8 and 9 are objected to because of the following informalities: dependent claims depend on cancelled claim 7. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 8, 9, 13, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. (Patent No.: US 6,524,153) in view of Kazlas et al. (Patent No.: 6,683,333).

Regarding claims 1 and 16, referring to Figs. 1, 2, 5A-5E, Ikeda teaches an electrophoretic display comprising: a plurality of pixel electrodes (7) that are provided independently with respect to pixels uniformly arranged above a display surface; applying a voltage to the pixel electrodes not greater than 20V (col. 4, lines 38-51); a substrate (1b) having a common electrode (6) that covers an entire area corresponding to the display surface; and an electrophoretic ink layer in which a plurality of charged pigment particles (5) are contained and dispersed in a solution (4) (col. 3, lines 22-33, col. 4, lines 1-29); wherein the common electrode (6) and the pixel electrodes (7) are respectively driven at different electric potentials causing electric fields by which the charged pigment particles (5) move in desired directions to form a desired display content emerging above the display surface in response to display data, which is rewritten in such a manner that the display content is erased (display surface is white) at once

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from the entire area corresponding to the display surface and is then rewritten (select pixel that are used to display the black color) with a new one (col. 4, lines 38-56 and col. 11, lines 34-47).

Ikeda differs from claims 1 and 16 in that he does not specifically teach an active-matrix array of switching elements comprised of thin-film transistors that are respectively connected with the pixel electrodes. However, referring to Figs. 3, 5, 11 and 12, Kazlas teaches an active-matrix array of switching elements (TFT) comprised of thin-film transistors that are respectively connected with the pixel electrodes (34') (col. 6, lines 19-27, col. 10, lines 23-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the active-matrix as taught by Kazlas in the system of Ikeda in order to provide a low cost and high performance display.

Regarding claim 2, Ikeda teaches a first common voltage (i.e., reverse-polarity voltages) is applied to the common electrode to erase the display content from the entire area corresponding to the display surface, while a second common voltage (i.e., negative voltages) is alternatively applied to the common electrode to rewrite the display content with the new one (col. 9, lines 49-64).

Regarding claims 3-5, Ikeda teaches voltages respectively applied to the common electrode and the pixel electrodes are both not greater than 20V, 15V, and 10V (col. 4, lines 38-51).

Regarding claim 6, Ikeda teaches the charged pigment particles and the dyed solution are contained in a plurality of microcapsules, which are linearly arranged within the electrophoretic ink layer (col. 3, lines 22-33).

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Regarding claims 8 and 9, the combination of Ikeda and Kazlas teaches thin-film transistors are low-temperature processed polysilicon and organic films (col. 6, lines 29-49 of Kazlas).

Regarding claim 13, Ikeda teaches any LCD electronic apparatus having the electrophoretic display (col. 1, lines 6-19).

Regarding claim 14, Ikeda teaches an electrophoretic display comprising: a transparent substrate that forms a display surface; a common electrode (16) that covers an entire area corresponding to the display surface (1a); a plurality of pixel electrodes (17) that are arranged under the common electrode and in connection with pixels respectively; and an electrophoretic ink layer (4) that contains a plurality of microcapsules linearly arranged between the common electrode and the pixel electrodes (col. 3, lines 22-33, col. 4, lines 1-29), wherein each of the microcapsules contain a number of negatively charged particles having white colors dispersed in a liquid having a specific color, and wherein both of the negatively charged particles and the liquid are set to approximately a same specific gravity within the microcapsule (col. 4, lines 38-56 and col. 11, lines 34-47).

Ikeda differs from claim 14 in that he does not specifically teach a plurality of thin-film transistors whose drain electrodes are connected to the plurality of pixel electrodes respectively, so that each of the pixel electrodes is independently controlled in electric potential by switching each of the thin-film transistors. However, referring to Figs. 3, 5, 11 and 12, Kazlas teaches a plurality of thin-film transistors (TFTs) whose drain electrodes are connected to the plurality of pixel electrodes (34') respectively, so that each of the pixel electrodes is independently controlled in electric potential by switching each of the thin-film transistors (col. 6, lines 19-27,

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col. 10, lines 23-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the thin-film transistors as taught by Kazlas in the system of Ikeda in order to provide a low cost and high performance display.

5. Claims 10-12 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant's arguments with respect to claims 1-6 and 8-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**. The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to: 703-872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding


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should be directed to the Technology Center 2600 Customer Service Office whose
telephone number is 703-306-0377.

JNguyen
11/04/2004


REGINA LIANG
PRIMARY EXAMINER